

CLAIMS

1. An electrochemical device which comprises a first pole, a second pole, and an ionic conductor, said first pole containing an active material having at least one element selected from the group consisting of 1B Group, 2B Group, 6A Group, 7A Group, and 8 Group of the short-form periodic table, and said ionic conductor containing an element belonging to 2A Group and/or 3B Group of the periodic table.

2. The electrochemical device as defined in Claim 1, wherein the active material for the first pole is one or more (in mixture form) of the metal oxide or metal sulfide represented by the general formula (1) below.

MX ... (1)

(where M denotes any of Cr, Mn, Fe, Co, Ni, Cu, Zn, Pd, Ag, Pt, and Au, and X denotes O or S.)

3. The electrochemical device as defined in Claim 2, wherein the metal oxide or metal sulfide represented by the general formula (1) is composed of M and X such that the ratio of M/X is from 0.3 to 3.

4. The electrochemical device as defined in Claim 1, wherein the active material for the first pole has an average particle diameter no smaller than 1 nm and no larger than 100 μm .

5. The electrochemical device as defined in Claim 1, wherein the first pole is formed from the active material mixed with a conductive material and a polymeric binder.

6. The electrochemical device as defined in Claim 1, wherein said ions are magnesium ions, aluminum ions, or calcium ions.

7. The electrochemical device as defined in Claim 1, wherein said second pole contains magnesium, aluminum, or calcium in the form of simple substance or compound.

8. The electrochemical device as defined in Claim 1, wherein said ionic conductor is an electrolytic solution or a solid electrolyte.

9. The electrochemical device as defined in Claim 1, which is a primary or secondary battery.